3D Blaster Riva TNT2 M64

Product Guide

Product Guide

3D Blaster™ RIVA TNT2™ M64

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Compliance

This product conforms to the following Council Directive:

- Directive 89/336/EEC, 92/31/EEC (EMC)

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Introduction

The 3D Blaster™ RIVA TNT2™ M64 is a high quality 2D/3D/video graphics accelerator card that is well suited for a wide variety of applications ranging from everyday desktop use to gaming and entertainment.

Leveraging NVIDIA™'s RIVA TNT2 graphics controller, the 3D Blaster RIVA TNT2 M64 delivers high quality and performance. Its dual texture architecture can process 2 pixels or textures per clock cycle. This enables developers to create special effects such as multi-layered textures, bump mapping to simulate rough surfaces, and environmental mapping that gives objects reflective properties. Developers can take advantage of advanced filtering modes (including trilinear mipmapping and anisotropic filtering) with full scene anti-aliasing to create realistic images that rival more expensive graphics workstations.

The 3D Blaster RIVA TNT2 M64 provides outstanding 2D and video acceleration as well and also supports software DVD decoders through hardware color and pixel format conversion.

Serial and Model Numbers

Your card's serial and model numbers can be found at the back of the card. We recommend that you record the serial and model number below.

Table 1: Serial numbers and model numbers.

Hardware	Product Codes	Numbers
3D Blaster RIVA TNT2 M64	Serial Number	
	Model Number	

Before You Begin

The README file on the CD-ROM contains information not available at the time of printing. Read the file before you continue. In addition, read the following:

- ❑ Minimum System Requirements
- ❑ Updating Drivers

Minimum System Requirements

- ❑ IBM® PC 100% compatible
- ❑ Genuine Intel Pentium II, Pentium III, AMD-K6, AMD-K6-2 or AMD-K6-3 processor at 233MHz or higher for best performance, 350MHz or above is recommended.
- ❑ 32 MB RAM
- ❑ 15 MB free hard disk space
- ❑ Vacant 32-bit AGP 1.0 expansion slot for 3D Blaster RIVA TNT2 M64
- ❑ VGA monitor
- ❑ CD-ROM drive installed
- ❑ Windows 95, Windows 98, Windows NT 4.0 (with Service Pack 3).

Updating Drivers

To download the latest drivers for 3D Blaster RIVA TNT2 M64, visit Creative's Web site (http://www.cle.creaf.com).

Preliminary step for Windows 95 users

Since Windows automatically detects new hardware and starts the software installation procedure upon startup, you should verify your Windows version number before installing the graphics card.

To verify your Windows 95 version number

1. Click **Start** -> **Settings** -> **Control Panel**.
2. In the **Control Panel** window, double-click the **System** icon.
   Your Windows 95 version number is displayed in the **General** tabbed page of the **Systems Properties** dialog box.
3. Note the version number.
   The following are the possible Windows 95 version numbers:
   - ❑ 4.00.950 (Retail version)
   - ❑ 4.00.950A (Retail version)
   - ❑ 4.00.950B (OSR version 2 and 2.1)
   - ❑ 4.00.950C (OSR version 2.5)

Check the appropriate box so that you can refer to the Windows' version number quickly during the software installation process.

Knowing and Installing Your Graphics Card

This section shows you the connectors on the 3D Blaster RIVA TNT2 M64 card.

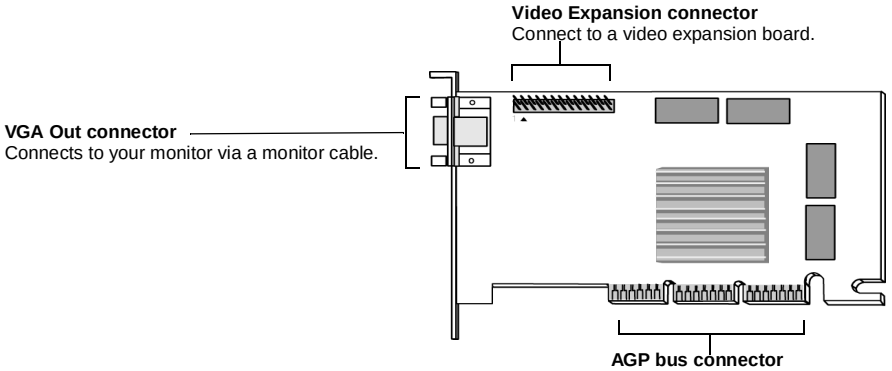
Video Expansion connector
Connect to a video expansion board.
VGA Out connector
Connects to your monitor via a monitor cable.
AGP bus connector

Figure 1: The 3D Blaster RIVA TNT2 M64 card.

To install the graphics card

If you are replacing an existing VGA card with 3D Blaster RIVA TNT2 M64, please remember to remove the existing VGA card.

1. Switch off your computer and all peripheral devices.
2. Touch any metallic surface on your computer to discharge any static electricity
3. Disconnect the power cord from the wall outlet.
4. Remove the computer cover.
5. Locate a free AGP expansion slot.
   Figure 2 shows the various types of expansion slots.
6. Remove the metal plate from the AGP slot.
   Keep the screw and metal plate for future use.
7. Align the bus connector of the graphics card with the expansion slot.
8. Press the card's bus connector gently and evenly into the slot, making sure that the bus connector comes into full contact with the slot. Then, secure the card to the computer casing with a screw. See Figure 3 below.

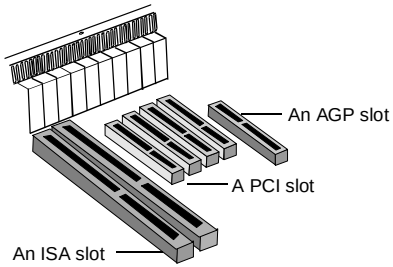

Figure 2: Types of expansion slots.

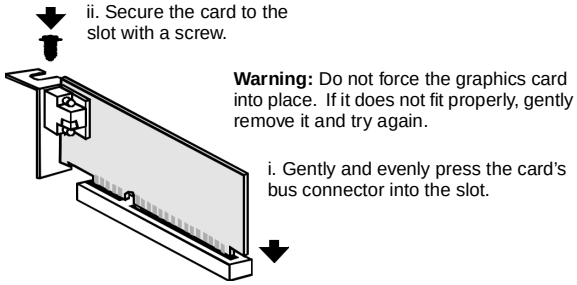
ii. Secure the card to the slot with a screw.
Warning: Do not force the graphics card into place. If it does not fit properly, gently remove it and try again.
i. Gently and evenly press the card's bus connector into the slot.

Figure 3: Securing the graphics card to the slot.

9. Connect the monitor cable to the VGA Out connector of 3D Blaster Riva TNT2 M64, as shown in Figure 4.

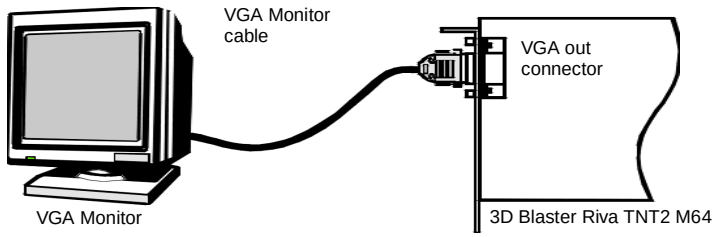

Figure 4: Connecting your VGA monitor to the 3D Blaster RIVA TNT2 M64.

10. Replace the computer cover and plug the power cord back into the wall outlet.

- If you are using a multi-frequency monitor, you may need a special 15-pin PS/2-compatible adapter cable. If your multi-frequency monitor allows you to switch between 'TTL' and 'analog' operation modes, set the switch to 'analog'. For details, refer to your monitor's manual.

Installing Software

After installing the graphics card, you can install the software. The 3D Blaster RIVA TNT2 M64 CD contains the following:

- ❑ Drivers for Windows 95/98 (common to both)
- ❑ Drivers for Windows NT 4.0
- ❑ Creative Enhanced BlasterControl™ for Windows 95/98 and Windows NT 4.0
- ❑ Creative SoftMPEG for Windows 95/9

This section is organized as follows:

- ❑ To install in Windows 95 (Retail version)
- ❑ To install in Windows 95 (OSR version 2.0 and later)
- ❑ To install in Windows 98
- ❑ To install in Windows NT 4.0 (Service Pack 3)

To install in Windows 95 (Retail version)

1. Switch on your system.
   Windows 95 automatically detects the graphics card.
   A **New Hardware Found** message box appears, informing you that a display adapter has been detected.
2. When a dialog box similar to Figure 5 appears, ensure that the **Driver from disk provided by hardware manufacturer** option is selected.
3. Click the **OK** button.
4. Insert the 3D Blaster RIVA TNT2 M64 CD into your CD-ROM drive.

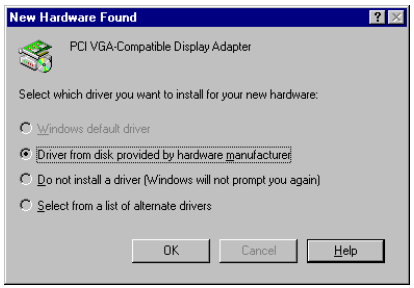
New Hardware Found
PCI VGA-Compatible Display Adapter
Select which driver you want to install for your new hardware:
Windows default driver
Driver from disk provided by hardware manufacturer
Do not install a driver (Windows will not prompt you again)
Select from a list of alternate drivers
OK
Cancel
Help

*Figure 5: Selecting the **Driver from disk provided by hardware manufacturer** option.*

5. In the **Install From Disk** dialog box, type **D:\WINDOWS** (where D: represents your CD-ROM drive) and click the **OK** button.
6. If prompted to select drivers, click the **3D Blaster RIVA TNT2 M64** drivers.
   The drivers are copied to your system.
7. When prompted to restart your system, click the **Yes** button.
8. After the system has restarted, proceed to install the applications. Click **Start** -> **Run**.
9. In the **Run** dialog box, type **D:\WINDOWS\SETUP** and click the **OK** button.
10. Follow the instructions on the screen to complete the setup.
    If you do not install all the applications now, you can install them later.

To install in Windows 95 (OSR version 2.0 and later)

1. Switch on your system.
   Windows 95 automatically detects the graphics card.
   A **New Hardware Found** message box appears, informing you that a display adapter has been detected.

2. When a dialog box similar to Figure 6 appears, click the **Next** button.
3. Click the **Other Locations** button when it appears in the **Update Device Driver Wizard** dialog box.
4. Insert the 3D Blaster RIVA TNT2 M64 CD into your CD-ROM drive.
5. In the **Select Other Location** dialog box, type **D:\WINDOWS** (where D: represents your CD-ROM drive) and click the **OK** button.
6. In the **Update Device Driver Wizard** dialog box, click the **Finish** button.

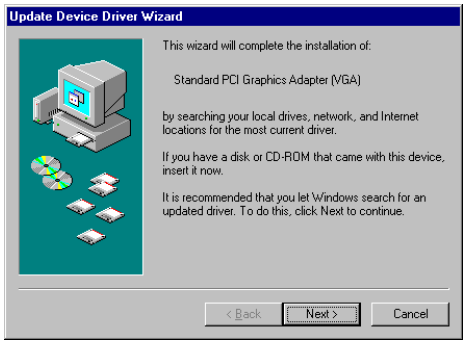
Update Device Driver Wizard
This wizard will complete the installation of:
Standard PCI Graphics Adapter (VGA)
by searching your local drives, network, and Internet locations for the most current driver.
If you have a disk or CD-ROM that came with this device, insert it now.
It is recommended that you let Windows search for an updated driver. To do this, click Next to continue.
< Back
Next >
Cancel

*Figure 6: The **Update Device Driver Wizard** dialog box.*

7. In the **Insert Disk** message box, click the **OK** button.
8. In the **Copying Files** dialog box, type **D:\WINDOWS** and click the **OK** button.
   The drivers are copied to your system.
9. In the **Update Device Driver Wizard** dialog box, click the **OK** button.
10. When prompted to restart your system, click the **Yes** button.
11. After the system has restarted, proceed to install the applications. Click **Start** -> **Run**.
12. In the **Run** dialog box, type **D:\WINDOWS\SETUP** and click the **OK** button.
13. Follow the instructions on the screen to complete the setup.
    If you do not install all the applications now, you can install them later.

To install in Windows 98

1. Switch on your system.
   Windows 98 automatically detects the graphics card.
   An **Add New Hardware Wizard** message box appears, informing you that a display adapter has been detected.

2. When a dialog box similar to Figure 7 appears, select the option **Display a list of all the drivers in a specific location, so you can select the driver you want**.
3. Click the **Next** button.
4. Insert the 3D Blaster RIVA TNT2 M64 CD into your CD-ROM drive.
5. In the **Models** list box, click the **Have Disk** button.

Add New Hardware Wizard
What do you want Windows to do?
Search for the best driver for your device. (Recommended).
Display a list of all the drivers in a specific location, so you can select the driver you want.
< Back
Next >
Cancel

*Figure 7: Selecting the option **Display a list of all the drivers in a specific location, so you can select the driver you want**.*

6. In the **Install From Disk** dialog box, type **D:\WINDOWS** (where D: represents your CD-ROM drive) and click the **OK** button.
   If you are installing 3D Blaster RIVA TNT2 M64 as a second or subsequent card to make use of Windows 98's multi-monitor capability, you will see an **Update Driver Warning** message telling you that the driver you have selected may not work correctly. You *must* click the **Yes** button to confirm that you want to use the selected driver. Otherwise, the system will install the wrong driver and will not recognize the card as a 3D Blaster RIVA TNT2 M64 card (for details, see "Windows 98 Multi-Monitor Display Problems" on page 19).
7. In the **Models** list box of the **Select Device** dialog box, make sure the **3D Blaster RIVA TNT2 M64** entry is selected and click the **OK** button.
8. Click the **Next** button.
9. Click the **Finish** button.
   The drivers are copied to your system.
10. When prompted to restart your system, click the **Yes** button.
11. After the system has restarted, proceed to install the applications. Click **Start** -> **Run**.
12. In the **Run** dialog box, type **D:\WINDOWS\SETUP** and click the **OK** button.
13. Follow the instructions on the screen to complete the setup.
    If you do not install all the applications now, you can install them later.

To install in Windows NT 4.0 (Service Pack 3)

1. Switch on your system.
2. Click **Start** -> **Run**.
3. In the **Run** dialog box, type **D:\WINNT40\SETUP** and click the **OK** button.
4. Follow the instructions on the screen to complete the setup.
   If you do not install all the applications now, you can install them later.
5. If the **Invalid Display Settings** message box appears after your system has restarted, click the **OK** button and change the display settings.
   For details, see "To change the display settings in Windows NT 4.0" on page 11.

Changing Settings

To change the display settings in Windows NT 4.0

1. Right-click your desktop, and then click **Properties** on the shortcut menu.
2. In the **Display Properties** dialog box, click the **Settings** tab.
3. In the **Desktop Area** group box, move the slider to set the desired resolution.
4. In the **Color Palette** group box, select the desired color. Certain colors may not be available for some display resolutions.
5. In the **Refresh Frequency** group box, select the desired refresh rate.
6. To test the settings, click the **Test** button, and then click the **OK** button.
   When the **Testing Mode** dialog box re-appears:
   - If the test bitmap is properly displayed, click the **Yes** button.
   - If not, click the **No** button. A warning message will be displayed. Click the **OK** button and repeat steps 3 through 6, changing one or more of the settings.
7. Click the **OK** button to close the **Display Properties** dialog box.

To change the performance settings in Windows 95/98 and Windows NT 4.0

You can customize the settings of your graphics card for optimal performance with applications. However, if your monitor display exhibits pixel drop (that is, pixels, usually white in color, appear on the screen) or any other abnormal behavior, revert to the factory default settings (see “Troubleshooting” on page 19).

To do so in Windows 95 and Windows NT 4.0

1. Right-click your desktop, and then click **Properties** on the shortcut menu.
2. In the **Display Properties** dialog box, click the **BlasterControl** tab.
3. On the **BlasterControl** tabbed page, click the **Tweak** icon.
4. In the **Tweak** module, select the desired settings.
5. To specify additional settings for 3D Blaster RIVA TNT2 M64, click the **Advanced Settings** button.
6. Select the desired settings and click the **OK** button.
   To see a brief description of an option or check box in the **BlasterControl Tweak** module, right-click the item, and then click **What’s This**.

To do so in Windows 98

1. Right-click your desktop, and then click **Properties** on the menu that appears.
2. In the **Display Properties** dialog box, click the **Settings** tab.
3. On the **Settings** tabbed page, click the **Advanced** button.
4. In the **Advanced Properties** dialog box, click the **BlasterControl** tab.
5. Select the desired settings and click the **OK** button.
   To see a brief description of an option or check box in the **BlasterControl Advanced** module, right-click the item, and then click **What’s This**.

Getting More Information

For 3D Blaster RIVA TNT2 M64

The Help file for 3D Blaster RIVA TNT2 M64 gives a brief introduction to the features supported by this graphics card.

To open the Help file for 3D Blaster RIVA TNT2 M64

- Click **Start** -> **Programs** -> **Creative** -> **3D Blaster RIVA TNT2 M64** -> **3D Blaster RIVA TNT2 M64 Help**.

For Creative BlasterControl

The Help file for Creative BlasterControl shows you how to use the BlasterControl utility to customize your screen resolution, color depth, and refresh rate in Windows.

To open the Help file for BlasterControl

- Click **Start** -> **Programs** -> **Creative** -> **BlasterControl Help**.

For Help topics specific to a BlasterControl module

- In the BlasterControl module you want, click the **Help** button.

For Creative SoftMPEG

The Help file for Creative SoftMPEG teaches you how to use SoftMPEG to play Video CDs and MPEG files.

To open the Help file for SoftMPEG

- In Creative SoftMPEG, right-click the Video window, and then click **Help** on the menu that appears.

Technical Specifications

Architecture Highlights

- ❑ 64-bit wide graphics engine and frame buffer
- ❑ 32 MB SDRAM
- ❑ 250 million pixels/sec, bilinear filtered

3D Features

- ❑ Optimized for Microsoft's Direct3D API
- ❑ Complete DirectX 6.x support
- ❑ 100% hardware triangle setup
- ❑ Twin texel (TNT) 32-bit graphics pipeline
  - 2 texture-mapped, lit pixels per clock
  - Single pass multi-texturing support (DirectX 6.x and OpenGL ICD)
  - Square and non-square texture support

- ❑ TextureBlend support examples:
  - Multi-texture
  - Bump map
  - Texture modulation
  - Light maps
  - Reflection maps
  - Detail textures
  - Environmental maps
  - Procedural textures
  - Sub-pixel accurate
- ❑ Backend blend
  - 32-bit ARGB rendering with destination alpha
  - Point sampled, bilinear, trilinear and 8-tap
  - Anisotropic filtering
- ❑ Per pixel perspective correct texture mapping
  - Fog
  - Light
  - Mipmapping
- ❑ 24-bit or 16-bit hardware Z-buffer (fixed or floating)
- ❑ 8-bit stencil buffer
- ❑ Full scene anti-aliasing

2D Features

- ❑ High performance 128-bit 2D/GUI/DirectDraw acceleration
  - Accelerated primitives include BLT, indexed DIB color translation, transparent BLT, stretch BLT, points, lines, polylines, polygons, fills, patterns, arbitrary rectangular clipping and fast text rendering hardware font cache
  - Pipeline optimized for multiple color depths including 32, 24, 16, 15, and 8 bits per pixel
- ❑ Fast 32-bit VGA/SVGA support
- ❑ Multi-buffering (Double, Triple, Quad buffering) for smooth animation and video playback

Video Support

- ❑ Video acceleration for DirectShow, MPEG-1, MPEG-2 and Indeo
- ❑ X and Y smooth up and down scaling with filtering
- ❑ Per-pixel color keying
- ❑ Multiple video windows with hardware color space conversion and filtering (YUV 4:2:2 and 4:2:0)
- ❑ Video port supports ITU-CCIR 565

Specifications

- ❑ AGP version 1.0 with 2X data transfer
- ❑ VESA DDC 2B + DPMS
- ❑ Single slot 2D, 3D graphics, and video accelerator
- ❑ NVIDIA RIVA TNT2 Model 64 graphics engine
- ❑ Integrated 300 MHz RAMDAC supporting up to 1920x1200 in true color
- ❑ MPEG-1, MPEG-2, and full-motion video acceleration/assistance
- ❑ Full Plug and Play compliant

Drivers

- ❑ Windows NT 4.0 and Windows 2000 (when available) display drivers
- ❑ Windows 95 and Windows 98 display driver, DirectDraw, Direct3D, DirectVideo, ActiveX
- ❑ OpenGL ICD for Windows 95 and Windows NT 4.0
- ❑ VBE 3.0 compliant

Utilities

- ❑ Creative Enhanced BlasterControl™
- ❑ Creative Enhanced SoftMPEG

Applications Supported

- ❑ All Windows 95 applications, including DirectDraw and Direct3D games and applications
- ❑ OpenGL applications under Windows 95 and Windows 98.

The refresh rates shown in the table are the highest obtainable and are monitor-dependent. Resolutions, pixel depths, and refresh rates are also driver-dependent and may not be available for some applications or operating systems.

Table 2: Refresh rates supported by different video modes

Refresh Rates	**Number of Colors**		
Resolution	**256 (8-bit)**	**64k (16-bit)**	**16.7 million (32-bit)**
640x480	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170, 200	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170, 200	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170, 200
800x600	60, 70, 72, 75, 85, 100, 120, 140, 144, 170, 200	60, 70, 72, 75, 85, 100, 120, 140, 144, 170, 200	60, 70, 72, 75, 85, 100, 120, 140, 144, 170, 200
1024x768	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170, 200	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170, 200	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170
1152x864	60, 70, 72, 75, 85, 100, 120, 140, 144, 150	60, 70, 72, 75, 85, 100, 120, 140, 144, 150	60, 70, 72, 75, 85, 100, 120, 140
1280x1024	60, 70, 72, 75, 85, 100, 120	60, 70, 72, 75, 85, 100, 120	60, 70, 72, 75, 85, 100, 120
1600x1200	60, 70, 72, 75, 85, 100	60, 70, 72, 75, 85, 100	60, 70, 72, 75, 85
1920x1080	60, 70, 72, 75, 85, 100	60, 70, 72, 75, 85, 100	60, 70, 72, 75
1920x1200	60, 70, 72, 75, 85	60, 70, 72, 75, 85	60, 70

Troubleshooting

System Hangs, Blank Screen or Corrupted Display

After installing 3D Blaster RIVA TNT2 M64 and starting your system, the monitor displays a blank screen.

Solutions Try the following:

- ❑ Switch off your system and wait a while before switching it on again.
- ❑ Verify that any built-in VGA on your motherboard is disabled and that you have removed any other video display card from your system.
- ❑ Ensure that your 3D Blaster RIVA TNT2 M64 card's bus connector is fully inserted into the expansion slot. Ensure this by pressing it gently and evenly into the slot.
- ❑ Verify that the pins of your monitor's VGA Input connector are not bent and that the connector is properly connected to the VGA Out connector of 3D Blaster RIVA TNT2 M64.

Windows 98 Multi-Monitor Display Problems

In a multi-monitor setting, the monitor connected to the 3D Blaster RIVA TNT2 M64 card remains blank even though the card and its drivers have been installed.

Cause If 3D Blaster RIVA TNT2 M64's drivers are not specified during the software installation, the system installs it as a standard VGA card that does *not* support Windows 98's multi-monitor feature.

Solution Update the device drivers to 3D Blaster RIVA TNT2 M64 drivers:

1. Right-click your desktop, and then click **Properties** on the shortcut menu.
2. In the **Display Properties** dialog box, click the **Settings** tab.
3. On the **Settings** tabbed page, click the **Advanced Properties** button.
4. In the **Advanced Display Properties** dialog box, click the **Change** button.
5. In the **Select Device** dialog box, click the **Have Disk** button.
6. Insert the 3D Blaster RIVA TNT2 M64 CD into your CD-ROM drive.
7. Follow steps 6 through 13 of the procedure in "To install in Windows 98" on page 8 to complete the update.

Other Display Problems

Monitor display flickers or the screen goes blank after Windows starts.

Cause Your monitor may not support the resolution or refresh rate that you have set.

Solution Use display settings supported by the monitor.
To change the display settings:

1. Restart your system in Windows 98 **Safe mode**. To do so:
   i. Restart your system and when the message "Starting Windows 98..." appears, press <F8>.
   A list of options such as **Safe Mode** and **Command Prompt Only Mode** appears.
   ii. Select **Safe Mode** and press <Enter>.
2. After your system has restarted, right-click the desktop and click **Properties**.
3. In the **Display Properties** dialog box, click the **Settings** tab.

For the resolutions supported by your monitor, refer to its manual.

4. Try the following:
   - ❑ Make sure that the correct monitor is selected.
     To verify, click the **Change Display Type** button or the **Advanced Properties** button on the **Settings** tabbed page.
   - ❑ Use a lower refresh rate or the adapter's default.
     For details on this, refer to the topic "Using BlasterControl Monitor Settings" in the BlasterControl Help file.
   - ❑ Lower your monitor's resolution.
     To do so, adjust the color depth and desktop area on the **Settings** tabbed page.

Monitor display exhibits pixel drop (that is, pixels, usually white in color, appear on the screen) or other abnormal behavior.

Cause The settings that you have selected for your graphics card may be incompatible with one or more games or applications that you are running.

Solution Use the factory default settings:

1. Right-click your desktop, and then click **Properties** on the shortcut menu.
2. In the **Display Properties** dialog box, click the **BlasterControl** tab.
3. On the **BlasterControl** tabbed page, click the **Tweak** icon.
4. Click the **Restore Defaults** button.

Beeping Sounds During System Startup

When the system is starting up, there is a series of prolonged beeps.

Cause Your 3D Blaster RIVA TNT2 M64 card may not be firmly inserted into the expansion slot.

Solution Ensure that the bus connector of the graphics card is fully inserted into the expansion slot. Ensure this by pressing the card gently and evenly into the slot. You can also try removing the card and re-inserting it.

Problems Installing Software

In Windows 95 or Windows 98, the installation program for BlasterControl does not run automatically after you have inserted the installation CD into your drive.

Cause The AutoPlay feature in your Windows 95 or Windows 98 system is not enabled.

Solution To install the software from the CD:

1. Double-click the **My Computer** icon on your Windows desktop.
2. In the **My Computer** window, double-click the **Creative 3D Blaster RIVA TNT2 M64** icon.
   If the installation program does not run, double-click the **Windows** folder icon followed by the **Setup** icon.
3. Follow the instructions on the screen to complete the installation.

Problems Using Software

When you restart Windows, one of the following error messages appears:

- ***"BlasterControl will only work on Creative graphics product drivers. Do you want BlasterControl to be loaded the next time you start Windows?"***
- ***"BlasterControl will only work on Creative graphics product drivers."***

Cause 3D Blaster RIVA TNT2 M64 drivers, required by BlasterControl, may have been replaced by other drivers when you installed DirectX applications.

Solution Re-install or revert to the 3D Blaster RIVA TNT2 M64 drivers.
To revert to the drivers:

1. Right-click your desktop, and then click **Properties** on the shortcut menu.
2. In the **Display Properties** dialog box, click the **Settings** tab, and then click the **Change Display Type** button or the **Advanced Properties** button.
3. In the **Adapter Type** group box or on the **Adapter** tabbed page, click the **Change** button.
4. In the **Select Device** dialog box, click **3D Blaster RIVA TNT2 M64**, and then click the **OK** button.

5. In the **Insert Disk** message box, click the **OK** button without inserting any CD.
6. If 3D Blaster RIVA TNT2 M64 drivers and later versions of DirectX drivers are already installed, click the **Skip File** button until the **Adapter Type** group box or the **Adapter** tabbed page appears.
7. Click the two **Close** buttons to close the **Display Properties** dialog box.
8. When prompted to restart your system, click the **Yes** button.
   After you have restarted your system, the newer DirectX drivers will work with the latest 3D Blaster RIVA TNT2 M64 drivers.

Problem with OpenGL Applications

When starting OpenGL Screen Saver or applications in Windows 98, the message "No local buffer memory available" appears.

Solution Set a lower resolution and color depth:

1. Right-click your desktop, and then click **Properties** on the shortcut menu.
2. In the **Display Properties** dialog box, click the **Settings** tab.
3. In the **Desktop Area** group box, move the slider to set a lower resolution.
4. In the **Color Palette** group box, set to **640x480** and **16-bit color (high color)** for OpenGL applications to work properly.

OpenGL applications run uncharacteristically slowly in Windows 98.

Cause OpenGL applications do not support Windows 98's multi-monitor feature. Consequently, Windows 98 disables all hardware acceleration when the multi-monitor option is enabled.

Solution Disable the multi-monitor option:

1. Right-click your desktop, and then click **Properties** on the shortcut menu.
2. In the **Display Properties** dialog box, click the **Settings** tab.
3. Clear the **Extend my Windows desktop onto this monitor** check box.

Problem with PCI Bridge (in Windows 95)

After installing RIVA TNT2 M64 onto a Pentium II LX system or any other AGP system, the Resources tabbed page of the RIVA TNT2 M64 Properties dialog box in Windows 95 shows resource conflicts similar to the following:
Memory Range used FEDC0000 - FEDDFFFF used by PCI standard PCI-to-PCI bridge.
Memory Range used FD800000 - FDFFFFFF used by PCI standard PCI-to-PCI bridge.
Memory Range used FE000000 - FE7FFFFF used by PCI standard PCI-to-PCI bridge.

Cause The “PCI standard PCI-to-PCI bridge” is the CPU chipset to AGP controller, which Windows 95 cannot identify properly.

Solution No action required.
A conflict between the AGP video controller and the “PCI standard PCI-to-PCI bridge” in the Windows 95 Device Manager does not affect the functionality of the AGP card within Windows 95. This problem is common to all AGP graphics cards and does not affect RIVA TNT2 M64’s functionality. It has been resolved in Windows 98.

Problem with AGP Aperture Size

Changing settings in CMOS incorrectly can cause the system to stop functioning.

Some of the steps from step 3 onwards may not apply to your system's CMOS. Refer to your system's CMOS documentation for more details.

DirectDraw/Direct3D fails to use hardware acceleration (HAL).

Cause The CMOS setting for the AGP Aperture size is less than 8 MB.

Solution Set the AGP Aperture size to 8 MB or more.
Do the following in CMOS:

1. Restart your system.
2. During the memory check, press <Delete>.
   The CMOS setup menu appears.
3. Select **Chipset Features Setup** and press <Enter>.
4. Set your **AGP Aperture Size (MB)** to **8 MB** or more.
5. Press <Esc> to return to the CMOS setup menu.
6. Select **Save & Exit Setup**, and then press <Enter>.
7. Press <Y> and then press <Enter>.